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Farm Uses of Native Lumber

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Use of Lumber on the Farm

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More than 90 per cent of farm dwellings and 98 per cent of farm barns and outbuildings in Ohio are built of wood; and more than 75 per cent of the fences are supported on wooden posts, according to a survey made in one Ohio county. One-half of the dwellings, more than half of the farm buildings, and more than three-fourths of the fence posts must be replaced about every 40 years. This replacement program calls for an immense amount of lumber during the next 25 years.

The average Ohio farm needs 1200 feet of lumber, 50 fence posts, and 5 cords* of fuel wood annually. Of course, every farmer will not use just these amounts. Some farms will need more, some less. But it takes the yearly growth of from 16 to 20 acres to supply this wood. An acre of well managed woods in Ohio produces from 250 to 300 board feet per acre per year. According to the 1940 census, about 1 acre in 9 of Ohio farms was in woods, or approximately 18 acres for each 160-acre farm. This indicates there are enough woods in Ohio to perpetually furnish all the timber for farm use, IF those acres are cared for and managed properly.

The original farm buildings in Ohio were practically all built of native timber. Wood has served this fine old homestead for nearly a hundred years. The siding and outside trim is of yellow poplar; the interior trim of walnut, yellow poplar, and cherry. The design is typical of the early Western Reserve architecture in northeastern Ohio.

* A cord refers to a pile of stacked wood 8 feet long, 4 feet high, and 4 feet wide, and contains 128 cubic feet. A similar pile only 2 feet wide is often referred to, erroneously, as a cord. It is also often called a "rick."

Wood is popular on farms because it can be fashioned and shaped from the rough into usable products. And, almost every farm family has a practical "hammer and saw" carpenter who, with a little encouragement and instruction, can construct so much that is useful on the farm, and make many of the necessary repairs as they are needed.

Ohio is favored with 120 native species of trees, practically all of which can be used. They furnish wood that ranges from the finest finishing lumber to low grade material for fuel wood.

All native lumber cannot be used equally well for all purposes. The softer woods, such as yellow poplar, basswood, butternut, and cottonwood, are easily shaped and nailed. The dense, heavy woods, such as oak, maple, and beech, are not so easily used. Some woods decay rapidly if they come in contact with the soil or moisture. Much of the warping, twisting, and cupping of lumber can be overcome by proper stacking for curing. Some lumber can be nailed rather easily while green, or shortly after it comes from the sawmill, but is almost impossible to nail when dried.

Interior of hog house shown on page 9. All frame work and all pens are of rough native lumber.

Fall and winter seems to be the most seasonable time for farmers to work in the woods. Also, logs cut during the winter are less liable to decay from attacks of insects than are logs cut during the spring and summer.

Logs left lying on the ground during the summer decay rapidly. This is especially true with maple, beech, poplar, and ash.

As a rule, logs should be sawed into lumber shortly after the trees are felled. If that is inconvenient, the logs should be stored on skids to keep them well above the ground and so piled that air can circulate freely beneath and between the logs.

If lumber is to be conserved, it must be properly piled and protected. For proper seasoning of lumber, good foundations must be built at least 18 to 20 inches above the ground. The piles should be not more than 8 feet wide. The boards in the pile should be separated by seasoned strips or stickers 1 by 3 inches in size. For good air circulation, at least 2 to 3 inches of space should be left between each board.

When piling or storing lumber for future use, it is important to select a well drained site away from dampness and low, wet grounds. Lumber rapidly decays and becomes stained if surplus moisture collects between the boards. Good air circulation is necessary for well seasoned lumber. Careless handling of green lumber will not only lower the quality, but also will decrease the strength and durability when used for construction purposes.

. . . DISCUSSION OF VARIETIES . . .

ASH

White ash is strong and flexible. It has a high commercial value for handles, athletic equipment, vehicles, furniture, refrigerators, and boat construction. Because of this high commercial demand, young growth should be conserved. It is not a durable wood if it comes in contact with soil or moisture unless it is treated with a wood preservative, such as creosote.

White ash lumber is valued as flooring for homes, for interior finishing, cabinets, cupboards, kitchen conveniences, and home-made furniture. It is also desirable for farm buildings, and is used for joists, studding, plates, rafters, roofing strips, mow flooring, grain bins, and partitions. Ash is an excellent wood for tool handles, fence boards, hog and poultry houses, ladder rungs, hay ladder sills, crates, and boxes.

Other varieties, such as green, red, and black ash, are used locally the same as white ash. In many sections, such as northwestern Ohio, black ash is preferred over white ash for local use on the farm. It is lighter wood than the white ash, and is in demand for gates, fence boards, and general repair for farm equipment.

Ash has good heating qualities and is highly valued as fuel.

BASSWOOD

Basswood is one of the lightest of all the native hardwoods. It should not be used where strength is needed. It is a non-durable wood and, therefore, it should not contact the soil or be exposed to moisture. But, it is excellent for nailing. It may be used for farm gates, hay ladders, ladder railings, wagon boxes, grain bins (interior siding), roofing strips, boxes, baskets, and light crating.

It takes paint well and is excellent for interior finishing for dwellings, kitchen cabinets, window sash frames, and for wooden ware.

BEECH

Beech is one of the best native woods for rough barn framing, including poultry houses and tool sheds. It is often used for studding, joists, flooring, partitions, stanchions, and stalls. Beech should be used green, and logs should be cut in fall and winter. When dry, it becomes hard and difficult to nail. It warps badly if exposed to hot summer sun or if not properly piled following sawing. It can be used for heavy sills and stable floors, but must be thoroughly treated with wood preservative. Beech is high in demand for crating and basket material. Most wooden ware in kitchen, such as spoons, bowls, and rolling pins, are of beech.

It makes excellent fuel.

WATER- OR BLUE-BEECH

The wood is tough, close grained, heavy, and strong. It is good for mallets, handles, wedges, blocking, and fuel.

BUCKEYE

This is a light wood, but can be used for boards and strips where strength is not required, and for interior woodwork, crates, baskets, wooden ware, and furniture.

BUTTERNUT OR WHITE WALNUT

This wood is used for interior finishing, furniture and veneers, kitchen shelves and cupboards, sheathing and sub-flooring; for framing material where light construction is required, grain and storage bins, hog houses, poultry buildings, and corn cribs. It can also be used for fence boards and gates, crates, and boxing materials.

It nails easily and takes paint well, but is a non-durable wood in contact with soil or moisture.

CATALPA

Though catalpa plantings have not proved wholly satisfactory in Ohio, the wood is durable, and therefore is especially desirable for fence posts. It can also be used for barn framing, including sills, and for troughs, handles, and boxes.

REDCEDAR

The wood of the redcedar is especially valued for fence posts, also for chests, closet lining, interior finish, and for lead pencils.

BLACK OR WILD CHERRY

Wild cherry makes desirable framing, interior finishing, sheathing, and sub-flooring for dwellings. It is excellent furniture and cabinet wood. The heartwood, sometimes termed "red cherry" is most desirable for furniture and cabinet work.

For general farm use, it is desirable as studding, rafters, blocking strips for roofing, sub-flooring, and sheathing. It makes good supports for grain bins, and other storage containers, and is valued for crating and boxing material.

Wild cherry has low shrinkage and good nailing qualities. It is shock absorbing and strong, but the sapwood is non-durable in contact with moisture.

CHESTNUT

Where available, chestnut is one of the best all-around timbers for farm use. Chestnut blight has practically destroyed the native chestnut. However, in some areas, chestnut lumber can still be obtained.

COTTONWOOD

Cottonwood lumber is light and weak, but adapted to various uses where strength is not required, such as interior finish, shelves, cupboards, lath and

sheathing, wooden ware, chests, ironing boards, and baskets. It is also used in interior construction for poultry and hog houses, grain bins, boxes, crates, baskets, and food containers. Useful for wagon boards, ladder frames, gates, and fence boards.

Cottonwood is non-durable in contact with soil or moisture unless treated. It nails easily and takes paint well.

DOGWOOD

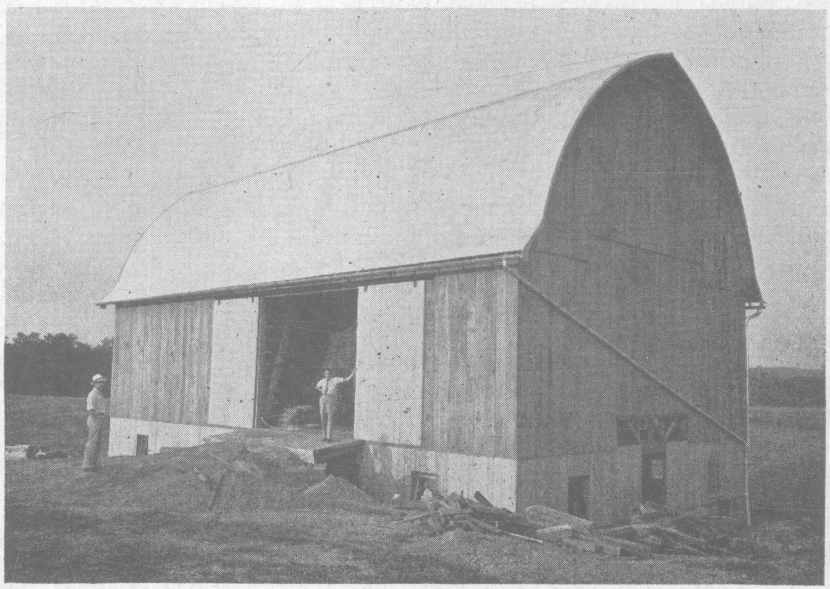
Although the dogwood is a small tree, the wood is hard, strong, heavy, and makes excellent wedges. It is also used by the textile industry for shuttles and for handles.

ELM

Locally in many sections, such as northwestern Ohio, white elm is considered one of the most useful native timbers. It is commonly used for house framing, sub-flooring, sheathing, rough boards, and roofing strips.

In barns and farm buildings generally, it is used for joists, sills, studding, flooring and roofing strips, stalls, and stanchions. It can be used for stall flooring if treated with wood preservative. It is difficult to nail when dried out.

Red or slippery elm, where obtainable, is preferred over the white elm. The wood is more easily worked and warps less. It has a distinct brownish-red heartwood that gives the wood more durable qualities than white elm. For this reason, it is frequently used for poles, posts, fence boards, and gates. Posts for satisfactory use, however, should be treated.



A livestock and hay barn near completion. It was built from home-grown lumber—rough chestnut siding above and matched white pine below. Copper-zinc alloy metal corrugated roofing.

Commercially, elm is in demand for crates, boxes, baskets, veneering stock, rough barrel staves and hoops, vehicle parts, and agricultural implements.

BLACK GUM

Black gum is tough, cross grained, warps easily, and is hard to work. It is used for crates, boxes, wooden wedges, and mallets. If treated with wood preservative, it can be used for barn and stable flooring.

It makes good firewood.

HACKBERRY

Wood of the hackberry is heavy, rather soft, weak, and decays rapidly when exposed. It can be used, however, for general framing purposes, sheathing, sub-flooring, rafters, handles, crating, baskets, furniture, kitchen cabinets, shelves, and wooden ware.

HICKORY

Hickory (shellbark, pignut, and bitternut) is the strongest of all the native hardwoods. The wood is tough, heavy, elastic, and has great shock resistance. However, hickory is a non-durable wood and must be treated if used for foundation timbers, such as sills and posts.

Among the common uses of hickory are joists, studding, blocking, plates, beams, stalls, rafters, mow flooring, supporting timbers for portable hog and poultry buildings, corn cribs and grain storage bins, hay rakes, ladder rungs, wagon wheels and tongues, agricultural implements, crates, baskets, porch furniture, rustic arbor trellis, outdoor chairs and tables, and wooden ware. Hickory makes superior handles, plow beams, and single-trees. Large quantities of hickory poles are used in cattle lots for straw sheds and feeding racks. In dwellings, hickory is sometimes used for rough framing, interior woodwork, and sub-flooring.

Hickory is excellent fuel wood, with high heating efficiency.

IRONWOOD

The wood is strong, hard, and wearable. It is used for mallets, wedges, handles for tools, fence posts, and boom poles.

LOCUST

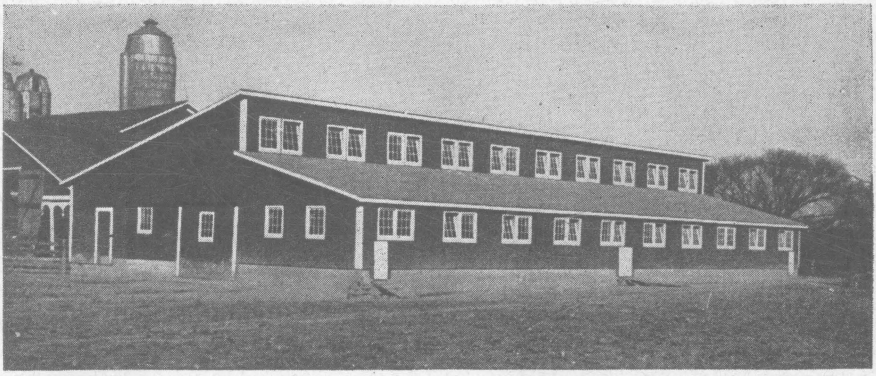
The wood of black (also called yellow) locust is yellow, coarse grained, heavy, strong, and very durable in contact with soil. It is widely planted for fence post wood in Ohio.

MAPLE

Lumber from the sugar maple is hard and strong. It is excellent for joists, studding, bracing, rough boards, mangers, stanchions and stalls, and cleating for soft woods. In addition, it is valued for flooring and as a finishing for dwellings. It is also useful for crates and baskets.

The soft maples, including silver and red maple, are lighter in color, softer in texture, and have less strength than hard or sugar maple.

All maple wood is excellent as fuel, ranking with oak, beech, and hickory.



This hog house and covered barnyard was constructed of beech and maple from the farm. By using home grown lumber, the owner saved approximately $1200. (Interior of hog house is shown on page 4.)

MULBERRY

The wood of mulberry is rather light and soft, but it is one of the most durable woods in contact with soil and is among the best wood for fence posts.

WHITE OAK

The white oak group of trees includes bur, swamp white, yellow, and chestnut oaks. The lumber from them is known as white oak. The wood is heavy, strong, hard, tough, close grained, durable, and is light brown in color. In many sections of the state it is the standard lumber for construction on the farm. It is highly desirable where strength and wearing qualities are important. White oak is used for foundation sills, posts, beams, flooring, stable flooring, stalls, stanchions, mangers, sled runners, skids for portable hog and poultry houses, farm tools, bridge plank, posts, fence boards, steps, shelves, porch boxes, furniture, and interior finishing of dwellings.

The heartwood of white oak timber should be used in contact with soil or where moisture is present, and is, therefore, most desired for posts. Second growth white oak is generally stronger and more elastic than old growth oak. For this reason, it is more acceptable for handle, pole, and wagon uses.

White oak also has a high rating for fuel.

RED OAK

Red oak lumber includes that from black, scarlet, and pin oak. However, the true red oak produces the better quality lumber. Usually, red oak is less durable and is of poorer quality than white oak. In many areas, red oak is selected over white oak for general farm use, particularly for framing and general construction. It is lighter, easier worked, and is much used for interior finishing, furniture, cabinets, shelving, and flooring. It is also

popular for sills, joists, studding, plank flooring, sheathing, rough siding, grain storage, bins, interior framing, sheathing for portable hog and poultry houses, agricultural implements, and the wooden parts of plows, cultivators, and harvesting tools.

When properly treated, it can be used for stable flooring and foundation timbers. It is non-durable in contact with soil and moisture.

All oaks have a high rating as fuel wood.

OSAGE ORANGE

The wood is heavy, exceedingly hard, very strong, and very durable in contact with the soil. It is largely used for posts; sometimes for wheel stock, lumber, and fuel.

TULIP OR YELLOW POPLAR

The wood from tulip trees is commonly known as yellow poplar. With white sapwood it is often referred to as white poplar, hickory poplar, and white wood. Poplar is a non-durable wood and requires treatment if exposed to soil and moisture. However, it nails easily, and holds paint well, and is an excellent wood for painting and enameling.

Because yellow poplar is a light wood, rather weak, it should be combined with heavy wood for satisfactory service. On the farm, it should be used only where strength is not required. It is used for roof boards, sheathing, siding, rafter strips, interior siding, poultry houses, grain bins, food storage, wagon boards, ladder frames, gates, fence boards, boxes, crates, and baskets.

Poplar wood is tops for interior finishing, window sash, paneling, siding, sheathing, sub-flooring, kitchen shelves, cupboards, furniture, molding borders, lattice, and food containers. Yellow or heartwood poplar is preferred for siding and outdoor trim or molding.

The wood of the magnolia or cucumber tree resembles closely the tulip or yellow poplar, but is usually of lower quality, darker in color, and harder in texture.

SASSAFRAS

Sassafras wood is light, soft, weak, and brittle, but the heartwood is durable in soil. It is used for light construction work, boards, interior finishing, shelves, boxes, crates, ladders, poles, and posts.

SYCAMORE

The sycamore is often overlooked as a suitable native wood for building purposes. In northwestern Ohio it is rated high for general farm building purposes, such as for framing, especially studding, joists, sills, floors, and sheathing. It can be used for partitions, stalls, stanchions, and, if treated with wood preservative, for stable flooring. Sycamore is very well suited for framing, interior finishing, flooring, furniture, panels, and shelves in dwelling houses. Commercially, sycamore is in demand for wooden ware, crates, veneers, and baskets for fruit and vegetable growers.

It is rated high for fuel.

BLACK WALNUT

Usually, walnut or black walnut is considered too valuable for general building purposes. It is a prized wood for interior finishing, cabinet work, and furniture. Black walnut has long been the standard wood for gunstocks. The demand for this timber for veneer and plywood has increased rapidly during the past few years, and it is almost a luxury wood on the farm, as well as in the city. However, it is adaptable to almost any type of building construction on the farm. Many of the pioneer farm buildings were constructed almost entirely of walnut. Even black walnut rail fences were common in many sections of the state.

The wood is strong, workable, nails well, expands and shrinks very little on account of changing moisture conditions, and warps less than the other native hardwoods. Walnut heartwood is fairly durable in contact with the soil, and often is used for gates, fence posts, and boards.

WILLOW

Willow wood is soft, light, and weak. It is used for pulpwood, for a high grade charcoal, and for temporary shelters, hog and poultry buildings. It can also be used for poles, light boards, handles, baskets, crates, furniture, and wooden ware.

Wood is an important fuel in Ohio. If the 230,000 farms used an average of 5 cords a year and if the average cost was $5 a cord, the fuel bill would be $5,750,000. Ohio farms can furnish that fuel.

. . . WOODS FOR SPECIAL USES . . .

FARM DWELLINGS

Framing.—Sugar maple, beech, red oak, white oak, chestnut, hackberry, white and red elm, sycamore, hickory.

Floors.—Oak, maple, beech, sycamore, white ash.

Interior Trim - Finish.—Oak, walnut, yellow poplar, butternut (white walnut), sycamore, chestnut.

Roof Boards.—Chestnut, red elm, white ash, black ash, hackberry, cottonwood.

Shelves.—White ash, tulip tree (yellow poplar), chestnut, red oak, cottonwood, red elm, hackberry, basswood, butternut (white walnut).

Siding.—Yellow poplar, chestnut.

Flooring.—White ash, red oak, maple, white oak.

Cupboards.—Yellow poplar, basswood, white ash, hackberry, buckeye, sassafras, butternut, walnut.

Wooden Ware.—Beech, maple, elm, ash, sycamore.

FARM BUILDINGS

Includes tool sheds, poultry and hog houses, granaries, corn cribs

Framing.—Oak, sugar maple, beech, sycamore, hickory, red and white elm, white ash, and chestnut.

Flooring.—Oak, red elm, hickory, white ash, white elm.

Stable Flooring.—White oak. Black gum, elm, red oak, beech, and sugar maple can be used but should be treated with a wood preservative—creosote.

Foundation Sills.—White oak, red elm, red oak, sugar maple, beech, and sycamore (on good foundation above ground, or treated, excepting white oak).

Partitions, Stalls, and Stanchions.—Red oak, maple, beech, white ash, hickory, sycamore, and chestnut.

Roof Boards.—Chestnut, yellow poplar, red elm, white ash, red oak, hickory, and cottonwood.

Siding.—Red oak, chestnut, yellow poplar, maple, butternut, and sassafras.

FENCE BOARDS

Red oak, red elm, basswood, white ash, black ash, sassafras, yellow poplar.

HANDLE STOCK

Ash, hickory, white oak, ironwood, walnut, catalpa.

CRATES, BOXES, BASKETS

Cottonwood, elm, sugar maple, beech, sycamore.

POSTS

Usually, *line posts* are cut with a top diameter of from 4 to 6 inches, and 7 feet long. Split halves should be 5 or 6 inches on the face, and 7 feet long.

Anchor or *end posts* should be 8 to 16 inches in diameter at top, and 9 to 10 feet long.

DURABILITY OF VARIOUS SPECIES FOR FENCE POSTS

20 years or over	10 to 20 years	5 to 10 years	Not over 5 years
Osage orange	White cedar	Black ash	White ash
Black locust	Chestnut	Slippery elm	Red and black oak
Eastern redcedar	Catalpa	Black cherry	Basswood
Mulberry	White oak	Butternut	Hickory
	Swamp white oak	Sassafras	Beech
	Bur oak	Chestnut oak	Sycamore
		Hemlock	Yellow poplar (tulip)
		Tamarack	Ironwood

For permanent use, non-durable woods such as soft maple and cottonwood should be treated with a preservative, such as creosote. Soak or apply with a brush at least 6 to 8 inches above ground level on post. Posts should be peeled and seasoned before treatment.

If local supply of durable post timbers, such as locust, can be purchased at reasonable prices, extra costs of treatment will not pay dividends.

FUEL WOOD

In heat value, wood compares favorably with the other fuels. High quality fuel wood, if well seasoned, is capable of producing as much heat per cord as a ton of coal or 200 gallons of domestic fuel oil.

The heat value is roughly proportionate to its dry weight. Hickory is about double the value of cottonwood.

The weights of green and of cured or air dry (20 per cent moisture) wood per cord are given in the table opposite. A standard cord of wood is 4 feet wide, 4 feet high, and 8 feet long—or 128 cubic feet. Actually, there are just about 90 cubic feet of solid wood.

SPECIES	WEIGHT PER CORD	
	Green, lbs.	Air-dry, lbs.
Hickory	5700	4600
White oak	5600	4300
Beech	5000	3900
Sugar maple	5000	3900
Red oak	5800	3900
White ash	4300	3800
Elm, Red or Slippery	4900	3600
Sycamore	4700	3200
Red maple	4700	3200
Black cherry	4100	3200
Chestnut	4900	2700
Cottonwood	4200	2500

SELECTION OF NATIVE WOODS FOR FARM USES

Kind of Wood	FARM DWELLING																		BARNS, SHEDS, ETC.							OTHER USES							
	Exterior trim	Flooring	Kitchen floor	Porch floor	Framing	Interior trim natural finish	Interior trim paint finish	Lath, plaster	Roof lathing	Sash	Shelving	Shingles	Siding	Steps, outdoors	Sub floors	Wall sheathing	Woodenware	Furniture	Framing	Mangers	Roof lathing	Siding, barn	Sills	Stall floors	Stalls	Gates, fences	Troughs,	Implements, farm	Wagon boxes	Handles, ax, hoe, rake	Crates, boxes	Posts	Fuelwood
Ash, white	x	x	x		x	x	x		x		x		x		x		x	x	x	x	x				x	x	x	x		x	x		x
Basswood, linden							x	x		x	x					x	x	x			x	x				x		x	x		x		
Beech		x	x		x	x			x		x				x		x		x	x					x		x	x			x		x
Butternut		x			x	x	x		x		x				x			x	x	x					x	x							
Catalpa																			x	x	x		x		x	x	x	x		x	x	x	
Cedar, red																						x	x		x	x	x	x				x	
Cherry,wild					x	x			x	x	x				x	x		x	x	x	x				x	x					x		x
Chestnut	x	x			x	x			x		x		x	x	x	x		x	x	x	x	x			x	x	x	x			x	x	
Cottonwood					x		x	x	x		x					x				x	x					x		x	x		x		
Elm, red		x	x		x				x		x			x	x			x	x	x	x		x	x	x	x	x	x			x	x	x
Elm, white					x				x		x					x			x	x	x				x			x			x		x
Gum, black		x			x		x		x		x				x	x	x		x	x				x	x						x		x
Hackberry					x		x		x		x		x		x		x	x	x	x	x				x	x		x			x		x
Hickories		x	x	x	x				x		x				x			x	x	x	x				x	x	x	x	x	x	x		x
Locust, black																			x	x			x	x	x		x	x		x		x	x
Maples, sugar and red		x			x														x	x	x				x	x		x		x	x		x
Mulberry																			x	x	x		x		x	x	x	x			x	x	x
Oak, red	x	x	x		x	x	x		x		x		x	x	x	x	x	x	x	x	x		x	x	x	x	x	x		x	x		x
Oak, white	x	x	x	x	x	x	x		x	x	x	x		x	x		x	x	x	x			x	x	x	x	x	x		x		x	x
Osage orange																			x	x			x	x	x	x	x	x		x		x	x
Poplar, yellow (tulip)	x				x		x	x	x	x	x		x				x	x		x	x	x				x		x	x		x		
Sycamore		x	x		x	x			x		x				x		x	x	x	x				x	x						x		x
Walnut	x	x			x	x				x	x			x	x			x	x	x			x		x	x	x	x		x		x	x
Willow																					x				x	x		x	x		x		

APPROXIMATE WEIGHTS OF VARIOUS WOOD PRODUCTS — POUNDS

Species	Lumber (per 1,000 board feet)		Logs (per 1,000 board feet log scale, Doyle Rule)					
			12 inches Diameter		18 inches Diameter		24 inches Diameter	
	Air dry	Green	Green	Dry	Green	Dry	Green	Dry
Ash, white	3,500	4,000	11,100	9,700	7,700	6,800	6,600	5,700
Basswood	2,100	3,400	9,500	5,900	6,600	4,100	5,600	3,500
Beech	3,600	4,600	12,700	10,100	8,900	7,000	7,500	6,000
Cherry, black	3,000	3,800	10,500	8,300	7,300	5,800	6,200	4,900
Chestnut	2,500	4,600	12,600	7,000	8,800	4,900	7,500	4,100
Cottonwood	2,200	3,600	10,700	6,300	7,500	4,400	6,300	3,700
Elm, white	2,900	4,000	11,300	7,800	7,900	5,500	6,700	4,600
Elm, slippery	3,300	4,600	12,600	9,200	8,800	6,400	7,400	5,500
Gum, black	3,000	3,700	10,400	8,300	7,200	5,800	6,100	4,900
Hackberry	3,500	4,400	11,300	8,900	7,900	6,200	6,700	5,200
Hickory	4,300	5,200	14,700	11,900	10,300	8,300	8,700	7,000
Locust, black	4,100	4,800	13,400	11,300	9,300	7,900	7,900	6,700
Maple, sugar	3,600	4,700	12,900	10,000	9,000	7,000	7,600	5,900
Maple, red	3,000	4,300	11,900	8,200	8,300	5,700	7,100	4,900
Maple, silver	2,800	3,800	10,500	7,800	7,300	5,400	6,200	4,600
Oak, red	3,600	5,400	14.800	10,400	10,300	7,300	8,800	6,200
Oak, white	4,000	5,200	14,400	10,900	10,000	7,600	8,500	6,500
Pine, longleaf	3,500	4,000	11,100	9,700	7,700	6,800	6,500	5,700
Pine, loblolly	3,200	4,500	12,400	9,000	8,700	6,300	7,400	5,300
Pine, shortleaf	3,000	3,700	10,400	8,300	7,200	5,800	6,100	4,900
Poplar, yellow (tulip)	2,400	3,200	8,800	6,500	6,100	4,500	5,200	3,800
Sycamore	3,000	4,300	12,000	8,300	8,400	5,800	7,100	4,900
Tupelo gum	3,000	5,500	15,200	8,500	10,600	5,900	9,000	5,000
Walnut, black	3,000	4,300	11,900	8,200	8,300	5,700	7,100	4,900
Willow	2,100	4,300	11,800	6,000	8,200	4,200	7,000	3,500

REFERENCES

"Selection of Lumber for Farm and Home Buildings"—Farmers' bulletin 1756, U. S. Dept. of Agriculture.

"Wood Handbook"—Forest Products Laboratory, U. S. Forest Service, U. S. Dept. of Agriculture.

"Measuring and Marketing Farm Timbers"—Farmers' bulletin 1210, U. S. Dept. of Agriculture.

"Ohio Trees"—Extension bulletin 185, Ohio State University.

"The Preservative Treatment of Farm Timbers"—Farmers' bulletin 744, U. S. Dept. of Agriculture.

"Relative Durability of Fence Post Timbers"—Ohio Agricultural Experiment Station, bulletin 219.

"The Use of Logs and Poles in Farm Construction"—Farmers' bulletin 1660, U. S. Dept. of Agriculture.

Information pertaining to any of the subjects mentioned in this bulletin may be had by consulting the Extension Forester or your County Extension Agent. Much of the reference material is available in the county agent's office. All of it may be secured by him.